

With regard to the botanical authorities that the author claims for his spelling, Mr. Hanbury has shown that Ruiz, Pavon, and Mutis rather incline the other way; Ruiz and Pavon, in their great work, the "Flora Peruviana," &c., adopted *Cinchona*, and Mutis finally came to the same conclusion. Mr. Spruce, another of the claimed authorities, in the Journal of the Linnæan Society, writes *Cinchona*, though in certain Blue Books he writes *Chinchona*. It must be remembered that such Blue Books appear to have been prepared under the direction of the author in his official capacity at the India Office, and to have had the word *Chinchona* forced into prominence. There remain only Tafalla, a pupil and successor of Ruiz and Pavon, Zea and Caldas, pupils of Mutis, all three of but little importance, as well as Dr. Seemann and the author, to weigh against such authorities as Humboldt and Bonpland, Poeppig, Weddell, Triana, Karsten, and others, as well as the universal concurrence of all the great systematic botanists from the time of Linnæus to the present day.

If then this question is to be settled by the weight of usage and authority, it is evident that an exceedingly rough balance suffices to give a ready result unfavourable to the author's case.

It is equally clear that much inconvenience would ensue from the change proposed and adopted by the author. To the systematic botanist great would be the inconvenience of altering the second letter of a generic name the first letter of which is C, an initial which is commoner than any other, and which stands for about one-seventh part of the whole number of genera. The suggestion that in an index a cross reference would meet the difficulty is good to a certain extent, but it would not altogether remove the nuisance; nor would the chemist, the apothecary, and the public generally accept without repugnance a change which would affect the spelling and damage the pronunciation not only of the original word, but also of derivatives in frequent use such as Cinchonine, Cinchonidine, Cinchonicine.

In short, the Linnæan name *Cinchona* is no longer under the control of the Countess of Chinchon, nor of the town of Chinchon, nor yet of those enamoured of either; it sufficiently recalls the memory of the benevolent countess; but it has long become scientific and general property, and stands by the right of usage and priority; it has a settlement due to a century and a third of time, and neither scientific men, nor the commercial world, nor the general public will be likely to alter it and the several words derived from it on the plea set up by the author.

W. P. H.

#### GERLAND'S "ANTHROPOLOGICAL CONTRIBUTIONS"

*Anthropologische Beiträge.* Von Georg Gerland. (Halle an der Saale : Lippert'sche Buchhandlung, 1875.)

THE present volume is, as the author informs us, only the first of a series of several volumes, in which it is his intention to group together as far as possible all the aspects under which the modern science of anthropology may be considered; to weigh the importance and estimate the nature of the problems which it has to solve; and to bring clearly and objectively before the reader the dif-

ferent steps that have been attained, or are demonstrable by facts, in the history of the origin and subsequent development of mankind.

The difficulty of the task which Dr. Gerland has thus set himself seems to us to be only equalled by the probable remoteness of its accomplishment. We all know that there is a tendency amongst German writers to project works on too colossal a scale, and to fill in their ground with such inexhaustible masses of detail, that every fresh accumulation of facts becomes a mountain across their readers' path, tending to obstruct rather than to clear the view; and valuable as are the materials which Dr. Gerland has brought together, his "Anthropological Contributions" cannot be pronounced free from these tantalising failings. Those who have time and patience to follow the author along all the collateral lines of inquiry into which his subject is incessantly divaricating will no doubt find themselves repaid for their labour; but the anthropologist, who has neither the need nor the leisure for going over old ground in search of new facts, will find it difficult to sift the wheat from the chaff.

In his introductory chapter Dr. Gerland considers all the branches of human inquiry with which anthropology is associated; the importance of missionary enterprise in relation to its bearing on the extension of our anthropological knowledge; and the influence that the estimate in which women have been held among any definite people, or at any fixed epoch, has had in modifying the *morale* and *physique* of the entire sex.

In the second, or main section of the work, the author treats of the primary and developmental history of man from the evolution point of view. Setting aside the hypothesis of special creation as utterly untenable, and as wholly discarded by every rational anthropologist, he proposes to consider man as derived by mechanical means from a natural animal source; beginning his line of argument by a discussion on the relative claims of the different portions of the habitable world to be regarded as the cradle of the human race. In this section of his work Dr. Gerland shows a vast amount of curious learning, and brings together a valuable mass of facts relating to the past as well as present fauna and flora of different regions, and their consequent greater or lesser adaptability for the coexistence of man. He considers the fact that the African races depend for their food-supplies on plants such as the sorghum and other cereals, which have come from Asia, although their own continent possesses many edible indigenous plants to which recourse is had in times of emergency, as a proof that man did not take his origin in Africa, for it is wholly irrational to suppose that after having once used native-grown cereals in their primary condition, men should have neglected these in favour of others imported from another continent like Asia.

In discussing the probable period in the earth's history when man appeared, the author insists upon the absolute necessity of geognostic repose as an indispensable element in the development of man from an animal origin. Cataclysms and violent disturbances of the earth's crust are obviously incompatible with the free enjoyment of all the essential requirements of animal existence, without which any advance in the developmental order of such an existence is inconceivable. In conclusion, he claims to

have proved that we have solid grounds for maintaining that man, considered both in his psychical and his physical nature, has been developed gradually and normally, and must be regarded as a link in one and the same serial chain of development to which all other organic bodies belong. Furthermore, he asserts that we cannot regard the organic and the inorganic as of heterogeneous origin; such an assumption would militate against the unity of the universe; and therefore we must assume that the organic has been developed from the inorganic. As development depends upon attraction and motion, and assimilation regulates the combinations of atoms and molecules, the ultimate development of more highly organised bodies is dependent upon the assimilation of more perfect combinations of matter, or, in other words, on better food, and hence the striving of the animal nature to obtain definite forms of nourishment must of necessity have exercised a paramount influence on its higher development. Thus, he argues that the organs of the senses, as sight, taste, &c., resulting ultimately in the formation of brain and nerve centres, have been developed in the vicinity of the mouth as auxiliaries in the process of nutrition. The author believes that every group of organisms has a definite supreme beyond which it cannot ascend: and while he considers that, mentally and psychically, the best of the human race will probably in remote future ages be able to attain a higher degree of perfection than any allotted to us in the present age of the world, he does not anticipate that externally they will differ greatly from ourselves.

The difficulty of answering why animals no longer pass the bounds of their parental types, he meets by assuming that the cosmical, natural, and geognostic relations which rendered such an advance possible in the case of the human race, and of the forms from which it was directly developed, no longer exist, and that hence the lower animals must remain fixed within their several limits.

We do not know how far his German readers may approve of the phonetic mode of spelling adopted by the author, but we confess that, notwithstanding the high authorities which its advocates advance in its justification, we fail to recognise its expediency or desirableness, and greatly prefer the ordinary mode.

#### OUR BOOK SHELF

*The Aërial World: a Popular Account of the Phenomena and Life of the Atmosphere.* By G. Hartwig, M. and P. D. With eight Chromoxylographic Plates, a Map, and numerous Woodcuts. (London: Longmans and Co., 1874.)

DR. HARTWIG is already well known as one of the most successful popularisers of the results of scientific research; and judged of from the point of view from which they are written, his books must, we think, be reckoned as of considerable value, and as likely to be of much use, both in spreading accurate scientific information and in giving their readers a taste for further independent study of science. Under present conditions we deem works of this class a perfectly fair means of scientific propaganda, hoping all the same that the time will come when the gospel of science will need no allurements to make it attractive to the people. In this volume Dr. Hartwig gives a vast amount of information on a great many subjects intimately or remotely connected with the air. It is not merely a popular treatise on Meteorology,

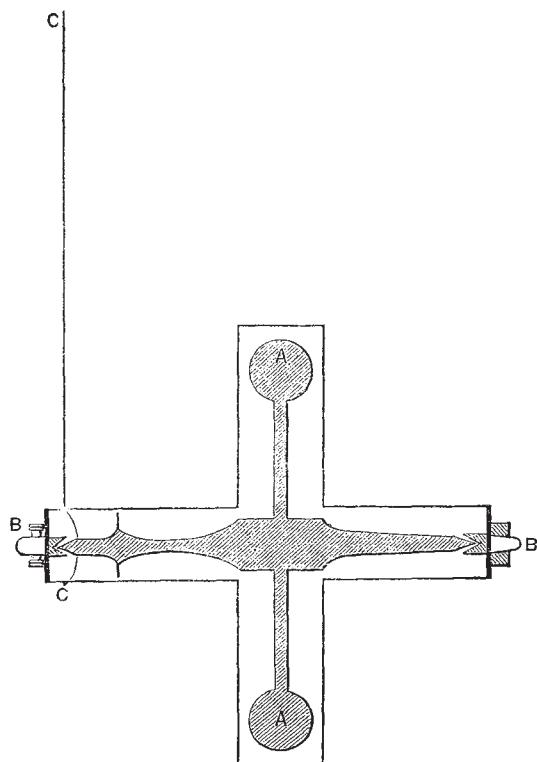
which of course has a large share of space devoted to it, but it contains as well much information on Sound, Light, Aérolites, Geology, Ocean Currents, Flight of Birds and Insects, Aérostatics, and many other things in "the heavens above, the earth beneath, and the waters under the earth." All the information in the book is valuable and rendered attractive mainly by a profusion of anecdotes, on the whole happily introduced. Dr. Hartwig's style is fluent and generally agreeable, sometimes eloquent and occasionally florid. His information, collected from a vast variety of sources, so far as we have tested it, is accurate and well up to time. We sincerely wish the work a large circulation. The numerous illustrations add in the main to its attractions.

#### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

#### A Gyrostat Problem

THE following question, taken from an examination paper set to the students of the Natural Philosophy Class in this University, Sir W. Thomson desires me to send to NATURE, as one likely to be interesting to its readers. The answer will be sent later, when the examination is over:—



"A gyrostat, hung by a cord CC at a distance of six centimetres from its centre of gravity, keeps its axis B horizontal when turning in azimuth at the rate of one-fourth of a radian\* per second. How many revolutions does the fly-wheel A A make per second? The weight of the wheel and case is 2,250 grammes, the mass of the wheel alone is 1,800 grammes, and its radius of gyration is four centimetres."

The University, Glasgow, March 13

D. M'FARLANE

\* The term radian has been recently introduced by Prof. James Thomson to denote the unit angle, that is, the angle subtended by an arc equal in length to the radius.